DOCUMENT RESUME

ED 406 366 SP 037 259

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TITLE Preservice Teachers' Sense of Efficacy and the Influence of Performance Assessment.
PUB DATE [96]
NOTE 15p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Education Majors; Elementary Secondary Education; Evaluation Methods; Higher Education; *Informal Assessment; *Microteaching; *Performance Based Assessment; *Self Efficacy; *Student Evaluation; Teacher Improvement; Teaching Skills; Undergraduate Students
IDENTIFIERS Preservice Teachers

ABSTRACT

This study investigated the impact of performance assessment on the self-efficacy of undergraduate education majors. The students enrolled in an undergraduate educational psychology course were assessed using two different methods: traditional objective exams and performance assessment through microteaching episodes. Data were collected to examine the students' levels of self-efficacy in developing learning objectives, lesson plans, and task analysis as well as implementing the lesson, all of which are central to the course objectives. Statistically significant findings were detected on four out of five pedagogical skills measuring perceived self-confidence (writing objectives, developing task analyses, developing lesson plans, and teaching a lesson). Participants also reported having more practice in these skills and higher levels of confidence in carrying out performance assessment tasks. (A table and five diagrams in the form of bar graphs and pie charts are attached.) (Author/ND)

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ED 406 366

Preservice Teachers' Sense of Efficacy and the Influence of Performance Assessment

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Study funded in part by a grant from
Center for Excellence in the Assessment of Student Learning

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Abstract

This study investigated the impact of performance assessment on the self-efficacy of preservice teachers. Preservice teachers enrolled in an undergraduate educational psychology course were assessed using two different methods: traditional objective exams and performance assessment. Data was collected to examine the levels of self-efficacy in developing learning objectives, lesson plans, and task analysis as well as implementing the lesson, all of which are central to the course objectives. Statistically significant findings were detected on four out of five pedagogical skills. Participants also reported having more practice in these skills and higher levels of confidence in performing performance assessment tasks.

Preservice Teachers' Sense of Efficacy and the Influence of Performance Assessment

Introduction

Educators in professional fields are challenged with the goal of measuring student learning in reliable and appropriate ways while building knowledge, expertise and confidence. Performance assessment is an ideal way to better match educational objectives with the assessment of student learning.

Berlak, et al. (1991) writes that the types of assessment instruments should be expanded to create new ways to measure student learning and to develop new methods of assessment that appropriately drive curriculum in predetermined and beneficial directions. This need is based on two fundamental arguments. First, tests and measurement instruments drive student learning and faculty instructional practices, providing that students and faculty value the outcomes measured by the assessments; and second, student abilities which are easily and economically measured with objective examinations, such as knowledge and recall, become the ones that are taught most, creating an unintentional test bias (Frederiksen, 1984).

Berk (1986) defines performance assessment as "the process of gathering data by systematic observation for making decisions about an individual." (p. ix). Berk describes a performance assessment test as a situation in which behavior is directly demonstrated and observed. Furthermore, Siegel (1986) points out that such tests should be constructed by considering the types of decisions that will be made about job performance, a job analysis highlighting significant aspects of the job, and the selection of tasks focusing on those most important to the job in question.

For these reasons, micro-teaching was introduced in a teacher preparation course at the University of South Carolina at Aiken as a method for assessing preservice teachers' pedagogical skill and to promote performance assessment as a tool to use in public education. "Micro teaching is a teaching situation which is scaled down in terms of time and numbers of students - usually a 4 to 20 minute lesson - involving 3 to 10 students. By scaling down the lesson, some of the complexities of the teaching act are reduced, allowing the teacher to

focus on selected aspects of teaching. Frequently, a micro teaching episode includes teaching a lesson and receiving feedback on the teacher's effectiveness. The feedback may come from videotape or audio tape recordings, supervisors, pupils, colleagues, and/or from the teacher's self-perceptions." (Allen and Cooper,1970, p. 1)

Often teachers teach as they are taught, and assess skill and knowledge as they themselves were assessed. By expanding the assessment tools that teachers are familiar with, as well as have personally been assessed by, will only serve to facilitate a wider use of these methods. "The teaching skills approach is based on the assumption that, by breaking down the complex teaching act into more easily learned skills, the teacher can gradually acquire a repertoire of teaching skills to use in the actual classroom. By building a repertoire of skills, the teacher is increasing his flexibility and versatility. He has more techniques at his command in order to vary his questions, reinforcement, or presentation styles. Thus, he is able to adapt his teaching style to suit the students' needs or the objective of the lesson." (Allen and Cooper, 1970, p.3).

Another critical component of effective teaching is a positive sense of efficacy. Self-efficacy is theorized to influence teachers' activities, effort and persistence and is a central construct in Bandura's (1986) social cognitive theory. Bandura (1986) has defined self-efficacy as "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Schunk (1984) researched this variable and described the relationship of self-efficacy and motivation to be curvilinear. For instance, students who have a very low level are unlikely to attack the task with much enthusiasm or persistence; however, if students have a very high level they may not give the task sufficient care or attention to achieve good results (Schunk, 1984).

Bandura (1977) states that personal perceptions of efficacy play a crucial role in human motivation because they take into account limitations of one's personal knowledge and skill. Given adequate skills, positive outcome expectations and personally valued outcomes, self-efficacy is hypothesized to influence the choice and direction of much human behavior (Schunk, 1989). According to Schunk (1991) there are four major sources of efficacy: actual performance, vicarious information, persuasory effects, and physiological information.

By investigating the sources of self-efficacy in relation to performance assessment, the proposed research will contribute to the assessment and efficacy literature. The primary focus of this research was to study the use of performance assessment on the self-efficacy of

preservice teachers' skills in planning and teaching lessons. The study uses survey instruments to answer the following research questions:

1. Do students who have a micro-teaching component in an educational psychology class differ in self-efficacy regarding pedagogical skills from those who do not?
2. Does micro-teaching affect the student's self-efficacy for planning a lesson?
3. Does micro-teaching affect a student's self-efficacy for teaching a lesson?

Methodology

This study explored the research questions focusing on the possible relationship of performance assessment and self-efficacy by using a quasi-experimental design with a control group. The first part of the analysis examined how performance assessment task influences student self-efficacy. This was done by assessing students' levels of efficacy in the area of lesson planning and teaching prior to the micro-teaching assignment at the beginning of the semester. Only those in the experimental group participated in micro-teaching. The control group answered questions on a similar but different survey instrument eliminating direct questions regarding micro-teaching.

The second part of the study assessed self-efficacy by repeating the survey instrument at the end of the course prior to the final micro-teaching activity (experimental group) or final exam (control group). Specific areas addressed by the students on the survey include reflections on self-efficacy of lesson planning and evaluation as measured by confidence and experience, as well as the perceived worth and difficulty of the micro-teaching experience. Therefore, the data was collected in two administrative contexts for the experimental and control groups: First day of class (micro-teaching), and prior to last micro-teaching experience. The data was collected during 1995-96 academic year (August-May).

Subjects and Setting

The study took place at the University of South Carolina at Aiken School of Education. Students were not randomly assigned to the control and experimental groups, but were able to self-select into courses due to scheduling requirements and course availability. Confidentiality was maintained by assigning students a number in which scores of the measures were recorded. Faculty did not have access to survey information. Students were assured that the surveys would not be examined until after final grades were posted.

The sample included undergraduate education majors. The students were usually sophomores or juniors and may or may not have been accepted into the School of Education Professional Program. The majority of the students were female between the ages of 20-30 years old. There were 27 students in the control group and 16 students in the experimental.

The educational psychology class was chosen because it addresses the issues of lesson planning and implementation, and had been incorporating performance assessment in the way of micro-teaching for the past year in nearly half of the educational psychology classes offered at USCA. There are no prerequisites for this course.

Materials

Micro-teaching has been researched to be an effective instructional and assessment method in teacher preparation programs and educational psychology classes, and studies have deemed this method as a valid and reliable way to assess pedagogical skill Micro-teaching assesses the students' abilities to design and teach 10-minute lessons. These lessons were videotaped so that students would be able to review and reflect on their teaching skill (self-modeling).

Instrumentation

The Micro-Teaching Efficacy Survey and Teacher Efficacy Scale were designed to measure student's perceived self-efficacy in the areas of lesson design and instruction The survey form consisted of 19 (experimental) or 12 (control) questions that had been specifically written to reflect the efficacious impact of assessment on the student. The survey instrument gathered student reactions and information in two different assessment contexts. The post-test survey was administered in a 5-10 minute block before the micro-teaching experiences or final exam. Pedagogical skills were measured on a 4 point confidence rating scale: 1=Not able, 2=Have not learned, but probably able, 3= Able, and 4=Very Able. Threats to external validity were controlled for by using all students enrolled in educational psychology during one academic year. The contextual design for efficacy impact effects allows the experimenter to attribute any change in perceptions to the particular testing situation.

Results

Pedagogical Skills

Preliminary data collected at the beginning of the term revealed that the control and experimental groups were not statistically different from each other. The overall mean for pedagogical skills for the control group (T) and experimental group (P) was 2.61. Pedagogical skills were broken down into five targeted areas: writing learning objectives, developing tasks analyses, writing lesson plans, developing teacher made tests, and instructing a lesson.

Post-test data revealed that there were statistically significant differences between the control and experimental groups on four of the five pedagogical skills at $\alpha = .01$. Only assessment (developing teacher made tests) was not significantly different. Pre- and post-test data for pedagogical skills can be found in Table 1 and Diagram 1.

‹Insert Table 1. Current Pedagogical Skills: Pre- & Post-Test Data›

‹Insert Diagram 1. Pedagogical Skills›

Lesson Planning Experience

Data was collected to determine how much experience students had developing lesson plans. Pretest data indicated no significant differences between the control and experimental groups. However, post testing revealed that students in the experimental group gained much more experience than those in the control group. All students reported writing a lesson plan at least once in the experimental group, but over 33% of the students in the control group reported never writing a lesson plan (see Diagram 2).

Instruction

Preliminary data regarding the number of times students had instructed a lesson revealed no significant differences. Approximately one-third of all students had never instructed a lesson prior to taking educational psychology. However, post-test results indicate that this percentage basically remained the same for the control group and decreased to 0% for the experimental group of students reported not having instructed a lesson (see Diagram 3).

‹Insert Diagram 2: Lesson Panning Experience›

‹Insert Diagram 3: Teaching Experience›

Conclusion

This study investigated the impact of performance assessment on the self-efficacy of preservice teachers. One way to measure self-efficacy is determined by perceived confidence and experience of the subjects on specific tasks or abilities. In this study, we measured confidence in five key pedagogical skills critical to the teaching profession and part of the curriculum of an educational psychology course.

Statistically significant findings were detected on four out of five pedagogical skills measuring perceived self-confidence. Subjects in the experimental group reported have significantly higher levels of confidence in writing objectives, developing task analyses and lesson plans, and instructing a lesson. Although these students also reported a higher level of confidence in developing teacher made assessments, this was not a significant finding.

These results are not surprising, and highlight the importance of matching educational objectives with student assessment. Students in the experimental group were assessed using performance assessment which targeted behavior directly demonstrated and observed. This in turn increased their motivation to not only learn, but practice these developing skills. Students in the control group were assessed using traditional methods of assessment (pen and paper objective tests). This type of assessment is effective in attaining knowledge and comprehension, but does little to develop the skills expected.

Likewise, efficacy also increases as a result of experience. Because students in the control group were not given the opportunity to practice or held accountable for these behaviors, experience levels remained the same. Over one-third of the control group reported having no experience in lesson planning and instruction at the conclusion of the semester; whereas, all students in the experimental group reported having experienced these skills at least once.

Students in the experimental group reported that they felt confident to perform the skills required on the performance assessment. Though a curvilinear relationship with self-efficacy and performance has been reported (e.g. those who feel overwhelmingly confident do not perform well since they may feel no need to practice developing skills), results show that the students in the experimental group did not overestimate their abilities (see Diagram 3).

Additionally, when asked how difficult they thought the assessment would be, more than 68% reported they felt it would be difficult (see Diagram 4). Given that as professionals we want to challenge students to learn, an assessment students consider difficult and yet are confident they can achieve, only serves to increase their self-efficacy on new and complex tasks.

‹Insert Diagram 3: Confidence in Performance Assessment Tasks›

‹Insert Diagram 4: Perceived Difficulty of Performance Assessment›

The fact that assessment drives the curriculum and student learning is nothing new. How we choose to harness this power is the question we need to consider. Teacher education is a complex, multidimensional, contextualized process that cannot be adequately measured by traditional paper and pencil tests or by observational methods alone. Assessments need to be designed to approximate the actual experiences and challenges beginning teachers face such as the abilities to plan and instruct, communicate and relate, and solve problems and make decisions.

Expecting students to master a body of knowledge and demonstrate mastery in appropriate and reliable ways is the first step in a long road in preparing students to teach. Pedagogical skills that direct the future development of preservice teachers' capabilities, coupled with an attention to self-efficacy which shapes motivation, persistence and attitude is the foundation we must build upon in teacher education programs. By using performance assessment in place of traditional objective tests, students are more able to attain not only the knowledge and skill, but the confidence and experience critical to the education of students in the classroom.

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Table 1. Current Pedagogical Skills: Pre- & Post-Test Data

	Pretest		Post-Test			
	T mean	P mean	T mean	P mean	T-Statistic	
CriticalT						
Objectives	3.03	3	3.15	3.56	7.629	2.602
Task Analysis	2.31	2.45	2.7	3.25	5.741	
Assessment	2.56	2.5	2.29	3.31	6.207	
Lesson Plans	2.44	2.37	2.76	2.94	1.498	
Instruction	2.75	2.81	2.8	3.13	3.795	

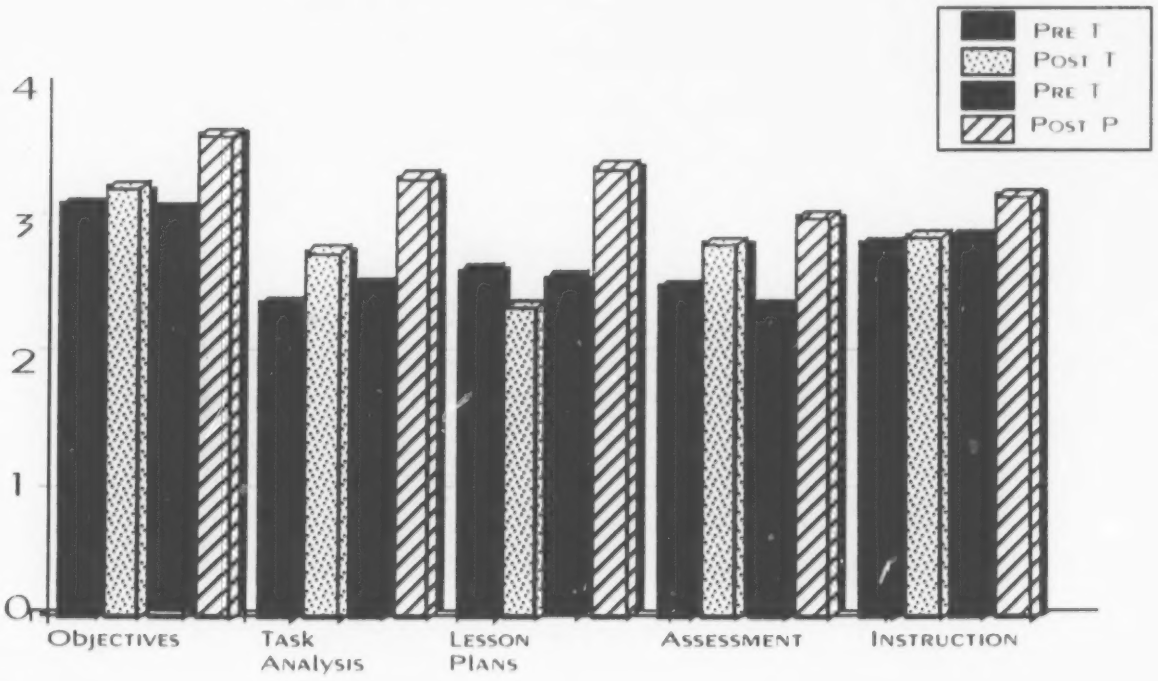

Diagram 1. Pedagogical Skills

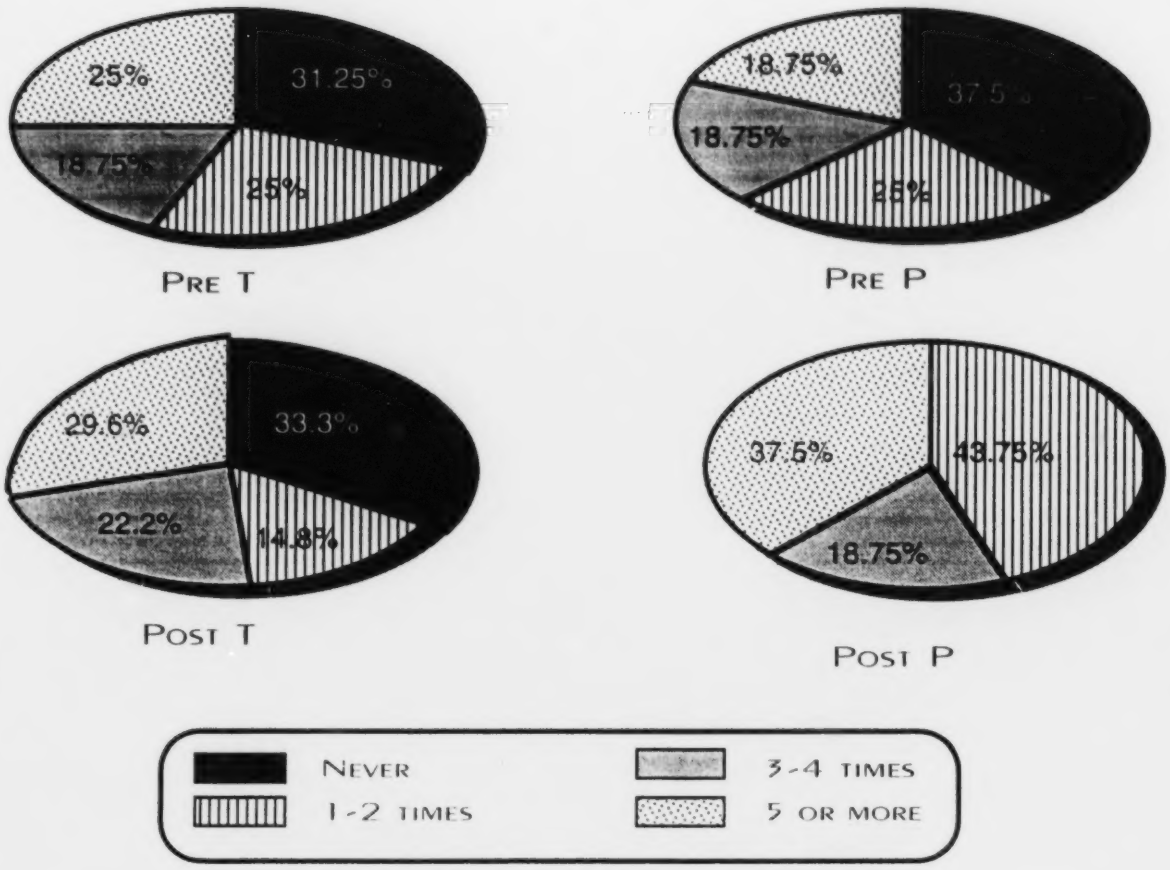

Diagram 2. Lesson Planning Experience

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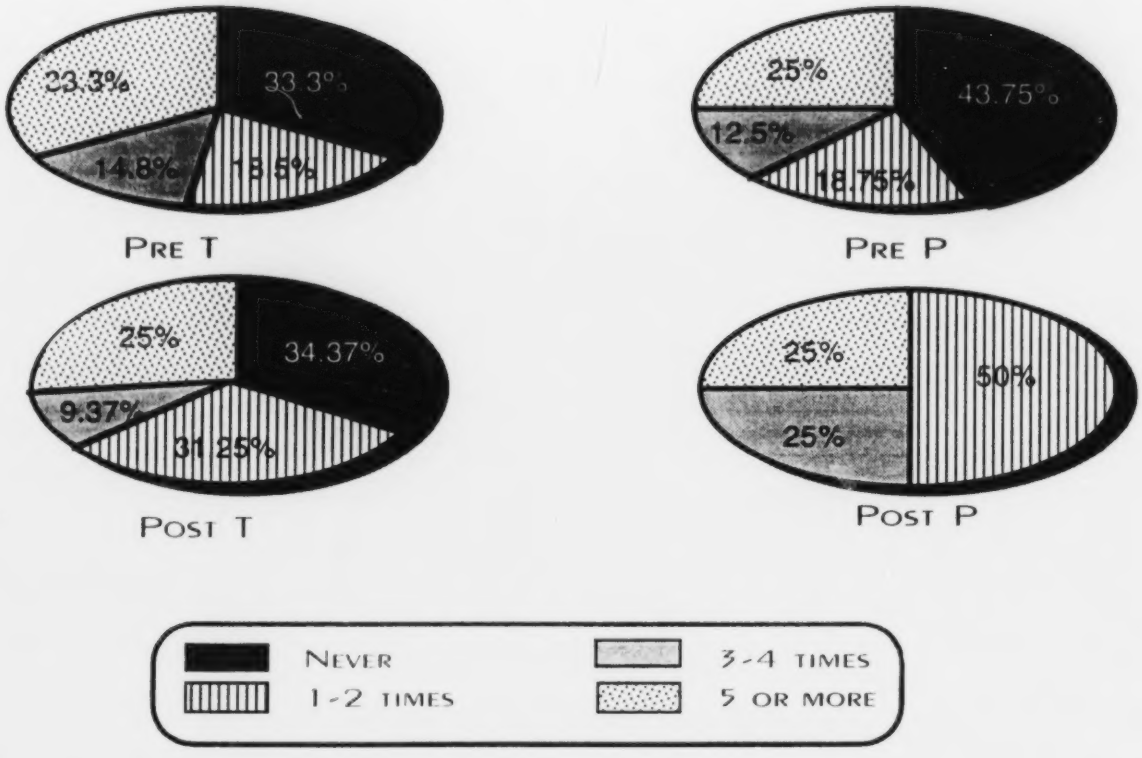
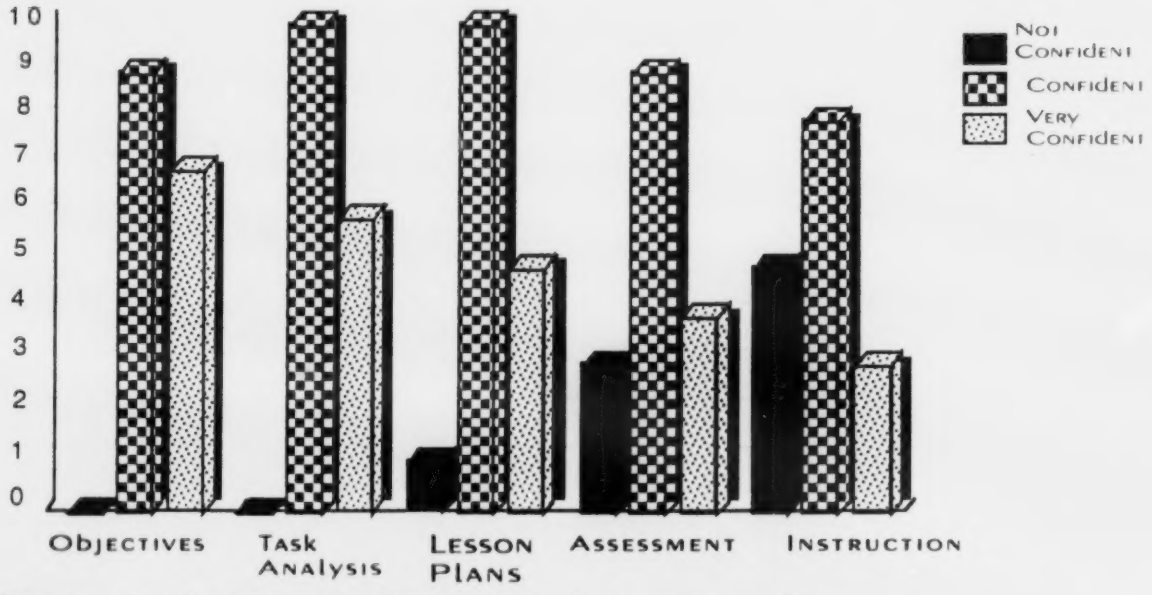


Diagram 3. Teaching Experience



Digram 4. Confidence in Performance Assessment Tasks

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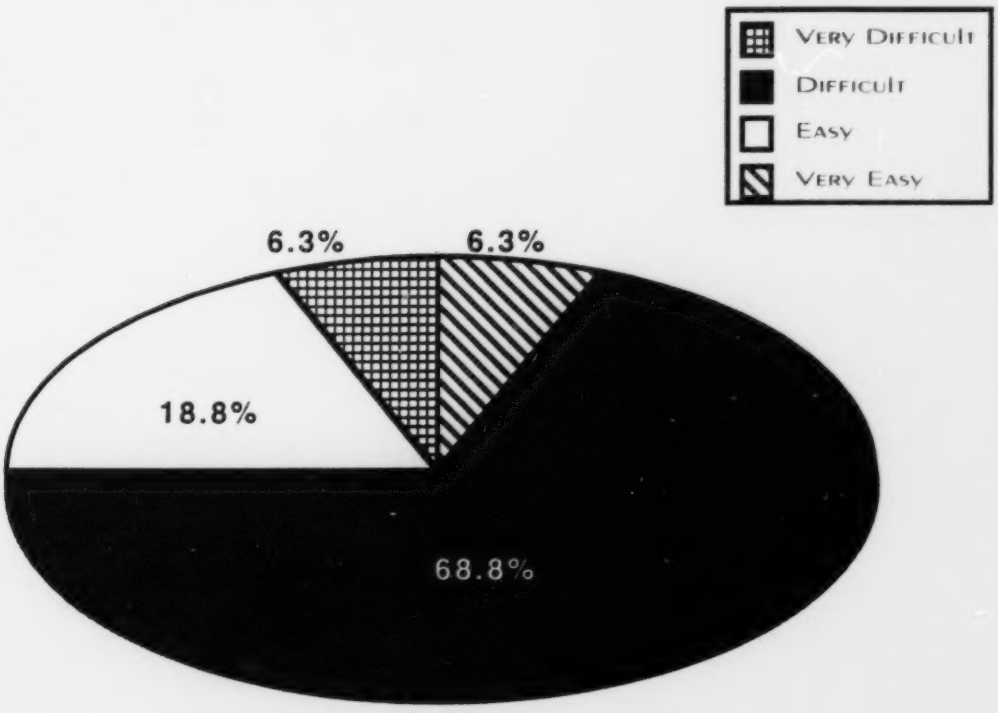

Diagram 5. Perceived Difficulty of Performance Assessment

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